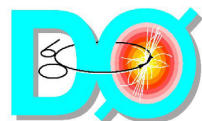


# Review of Downtime Procedures

- During recorded Physics runs
- Only the DAQ Shifter should issue `scl_inits`!
- Reasons to pause the run:
  - Muon readout has stopped (L2 100%)
    - redownload/restart from Muon readout\_client
  - Front End Busy (L1 100%): CFT/SMT/CAL
  - Missing or incomplete events
    - All L3 input becomes red in jMon
  - Alarm Watcher condition
    - E.g.: High Voltage trips



Store 1095

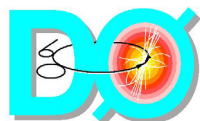
conn:alarm conn:calibdnf conn:devdnf conn:dsmdnf conn:l1dnf conn:l2dnf conn:l3dnf conn:logbook conn:sdaqdnf

client:d0ol03.fnal.gov:3145 d0run / coormon None init (0 evts)	client:d0ol05.fnal.gov:2065 d0smt / taker None init (0 evts)	<b>client:d0ol07.fnal.gov:33286 d0run / taker official/global CalMuon-4.20 paused 149012 (33095 evts)</b>	client:d0ol25.fnal.gov:41973 robmc / coormon None init (0 evts)
client:d0ol04.fnal.gov:1534 d0cap / coormon None init (0 evts)	client:d0ol06.fnal.gov:4858 d0cal / coormon None init (0 evts)	client:d0ol09.fnal.gov:3327 mutest / coormon None init (0 evts)	
client:d0ol04.fnal.gov:3959 None / None None init (0 evts)	client:d0ol07.fnal.gov:33282 d0run / coormon None init (0 evts)	client:d0ol12.fnal.gov:2035 d0lum / coormon None init (0 evts)	

**Black =  
paused run**

crate:cal5k	crate:cmetp	crate:ecsnw	crate:l1caldc	crate:l2glb	crate:seq2	crate:smt1_1	crate:stt2
crate:caltc	crate:cmwbp	crate:ecsse	crate:l1ctm	crate:l2muc	crate:seq3	crate:smt2_0	crate:stt3
crate:ccne	crate:cmwsc	crate:ecssw	crate:l1ctt	crate:l2muf	crate:seq4	crate:smt2_1	crate:stt4
crate:ccnw	crate:cmwsp	crate:fch3_s	crate:l1fpd	crate:l2ps	crate:seq5	crate:smt3_0	crate:stt5
crate:ccse	crate:cmwtp	crate:fch3_v	crate:l1lum	crate:l2ta	crate:seq6	crate:smt3_1	crate:test8
crate:ccsw	crate:cps	crate:fmnm	crate:l1mtm	crate:l2tb	crate:seq7	crate:smt4_0	crate:test9
crate:cftax	crate:ecnne	crate:fmns	crate:l1muc	crate:l2tc	crate:sidet01	crate:smt4_1	crate:trgfr
crate:cftst	crate:ecnnw	crate:fmsm	crate:l1mun	crate:l2td	crate:sidet10	crate:smt5_0	
crate:cmebp	crate:ecnse	crate:fmss	crate:l1mus	crate:l3wakeup	crate:smt0_0	crate:smt5_1	
crate:cmesc	crate:ecnsn	crate:fps	crate:l2cal	crate:seq0	crate:smt0_1	crate:stt0	
crate:cmesp	crate:ecsne	crate:l1cal	crate:l2ctt	crate:seq1	crate:smt1_0	crate:stt1	

dev:pulser\_lock dev:test



# Pause/Resume Run

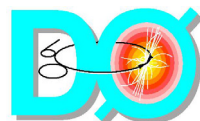
- The current rate of +0 is telling you that zero events have been collected in the last fifteen seconds.
- After clicking on the Resume button, a taker dialogue will pop-up. You *must* take the time to accurately record the downtime. Do not resume before a radio button is clicked & a comment is noted...

The screenshot shows the DAQ software interface. At the top, there are tabs for 'File', 'Modify', 'Info', 'Extensions', and 'Help'. Below these, the status is 'Status: paused', 'Run number: 149012', and 'Recording: on'. The configuration is 'Config: official/global\_CalMuon-4.20' and 'Prescale Set: 075E30'. The main window displays a list of 32 channels, each with a status of 'Done' and 'Disabled'. A red arrow points from a pink box labeled 'Run is Paused' to the 'Resume (Alt-p)' button at the bottom right. The bottom status bar shows '03:09:13 Run 149012: 33095 events (6.423610 Hz, +0). Elapsed time: 00:27:47.'

File	Modify	Info	Extensions	Help
Status: paused	Run number: 149012	Recording: on		
Config: official/global_CalMuon-4.20	Prescale Set: 075E30			
Done: 11bit:030 <Coor Set SpTrg #30 Disabled><Done>				
Done: 11bit:031 <Coor Set SpTrg #31 Disabled><Done>				
Done: 11bit:032 <Coor Set SpTrg #32 Disabled><Done>				
Done: 11bit:033 <Coor Set SpTrg #33 Disabled><Done>				
Done: 11bit:034 <Coor Set SpTrg #34 Disabled><Done>				
Done: 11bit:035 <Coor Set SpTrg #35 Disabled><Done>				
Done: 11bit:036 <Coor Set SpTrg #36 Disabled><Done>				
Done: 11bit:037 <Coor Set SpTrg #37 Disabled><Done>				
Done: 11bit:038 <Coor Set SpTrg #38 Disabled><Done>				
Done: 11bit:039 <Coor Set SpTrg #39 Disabled><Done>				
Done: 11bit:040 <Coor Set SpTrg #40 Disabled><Done>				
Done: 11bit:041 <Coor Set SpTrg #41 Disabled><Done>				
Done: 11bit:042 <Coor Set SpTrg #42 Disabled><Done>				
Done: 11bit:043 <Coor Set SpTrg #43 Disabled><Done>				
Done: 11bit:044 <Coor Set SpTrg #44 Disabled><Done>				
Done: 11bit:045 <Coor Set SpTrg #45 Disabled><Done>				
Done: 11bit:046 <Coor Set SpTrg #46 Disabled><Done>				
Done: 11bit:047 <Coor Set SpTrg #47 Disabled><Done>				
Done: 11bit:048 <Coor Set SpTrg #48 Disabled><Done>				
Done: 11bit:049 <Coor Set SpTrg #49 Disabled><Done>				
Done: 11bit:050 <Coor Set SpTrg #50 Disabled><Done>				
Done: 11bit:051 <Coor Set SpTrg #51 Disabled><Done>				
Done: 11bit:052 <Coor Set SpTrg #52 Disabled><Done>				
Done: 11bit:053 <Coor Set SpTrg #53 Disabled><Done>				
Done: 11bit:054 <Coor Set SpTrg #54 Disabled><Done>				
Done: 11bit:055 <Coor Set SpTrg #55 Disabled><Done>				
Done: 11bit:056 <Coor Set SpTrg #56 Disabled><Done>				
Done: 11bit:057 <Coor Set SpTrg #57 Disabled><Done>				
Done: 11bit:058 <Coor Set SpTrg #58 Disabled><Done>				
Done: 11bit:059 <Coor Set SpTrg #59 Disabled><Done>				
Done: 11bit:060 <Coor Set SpTrg #60 Disabled><Done>				
Done: 11bit:061 <Coor Set SpTrg #61 Disabled><Done>				
Done: [11fw_resume -> 11dn1] <L1fw Resume><Done>				
Download completed.				
Download completed.				

Stop (Alt-s) Resume (Alt-p)

03:09:13 Run 149012: 33095 events (6.423610 Hz, +0). Elapsed time: 00:27:47.

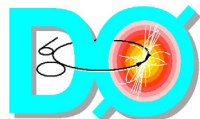




# Resume Run Taker Dialogue

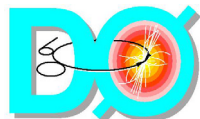
Resume Run	
Downtime reason	<div><div><input type="checkbox"/> Normal begin</div><div><input type="checkbox"/> Change prescales</div><div><input type="checkbox"/> HV trip</div><div><input checked="" type="checkbox"/> Level1</div><div><input type="checkbox"/> Level3</div><div><input type="checkbox"/> Muon</div><div><input type="checkbox"/> SMT</div><div><input type="checkbox"/> Other</div><div><input type="checkbox"/> Change configuration</div><div><input type="checkbox"/> Pilot error</div><div><input type="checkbox"/> LV trip</div><div><input type="checkbox"/> Level2</div><div><input type="checkbox"/> Host systems</div><div><input type="checkbox"/> Tracker/Preshower</div><div><input type="checkbox"/> Calorimeter</div></div>
Downtime comment	<div>x19 L2 100% FEB busy</div>
<div><div>OK (Ret)</div><div>Cancel (Esc,')</div></div>	

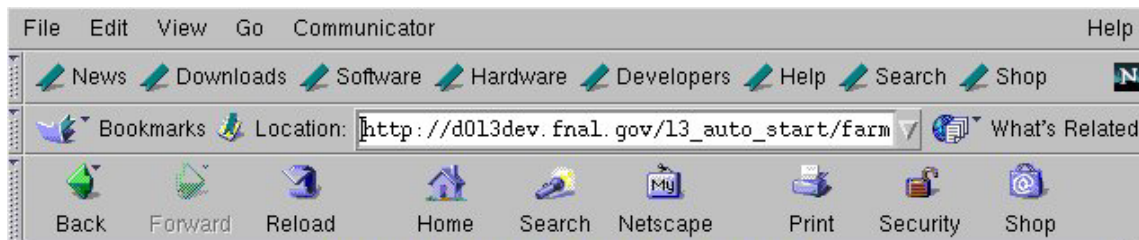
- Learn the difference between L1 Muon (x16,17,18,19) Crates & L2 (x21,22) & Muon Readout (x30-3b) - **Common mistake!**
- Comment should include which crate & reason if known
- Pilot error = DAQ Shifter mistake (oops!)
- Get an "OK" confirmation from detector shifter before you click the OK button.



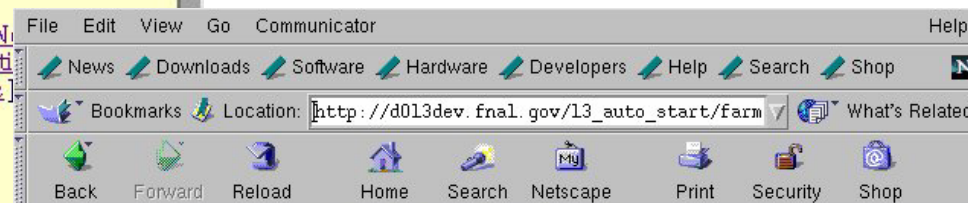
# Special Features

- *Resume Run* issues `scl_init` automatically
  - Muon readout crate stays in Waiting for Init state after Resume - issue `scl_init` from Coormon
- Do not pause the run for VRC resets
  - Can make situation worse
    - Record this downtime in logbook
    - VRCs will disappear in a couple of months
- VRC states in jMon appears to hang, but data taking is unaffected
  - One will see yellow bar & -1.0 Hz
  - Try a Monitor\_Reset from L3 Farm Configuration Page
    - Not necessary to stop/pause the run
    - L3 group aware of this problem & Andy Haas is working on it





## Monitor Reset



### Configurations:

Choose Configuration:

Monitor\_Reset ☐

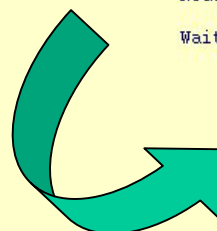
Show Log Files for this Configuration

List programs for this Configuration

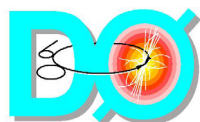
Reset Farm to this Configuration

### Resetting the Farm to configuration: Monitor\_Reset

```
Resetting node d013farm000.fnal.gov
Node d013farm000.fnal.gov - adding resource monitor_ace version v1.90
Node d013farm000.fnal.gov - adding resource lumi_monitor version v04
Node d013farm000.fnal.gov - adding resource l3ses version v00.03
Node d013farm000.fnal.gov - adding resource do_nothing version v1
Waiting for node d013farm000.fnal.gov
```



19 March 2002  
DAQ Shifters' Mtg

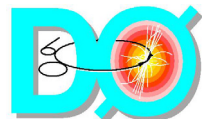


Alan L. Stone  
Louisiana Tech University



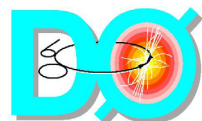
# More Special Features

- L3 Supervisor & Coor get out of sync
  - You will see an error in the taker during the trigger download: timed out...still pending: l3dnl
    - Unable to load prescale, start a run, etc.
  - Resetting L3 is not the solution...
- The solution: Slow Down
  - Free your trigger. Verify your crate configurations are correct in CRATER. Make an entry in the logbook...
  - Wait 3-4 minutes - let the Supervisor clear its cache & get back in synch with COOR
  - Start over. Download trigger & prescales.
    - If you still have a problem, call DAQ Troubleshooter



# How to Use Big Brother

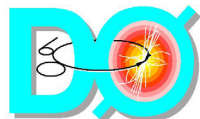
- If you see problems in cpu or memory
  - Review the online node assignment on the DAQ Shifter web page (updated by Stu Fuess 10 March)
  - If it is a detector node, inform shifter their system may go critical (freeze up) if they don't clean up and/or close processes/applications on that node
  - DAQ Shifter is responsible for keeping d0ol07 healthy
    - Keep eye on d0ol03, d0ol04, d0ol12 as well
- Useful commands
  - setup d0online; d0ssh -l 'account' 'node'
    - E.g.: d0ssh -l d0cap d0ol04
  - ps -efwH | grep 'application string'
    - E.g.: ps -efwH | grep java
    - One gets the extended view (full path & process name) & the heirarchy when an application has multiple threads
  - kill -9 'process ID #'
    - Quickly kills the process & usually all dependent threads





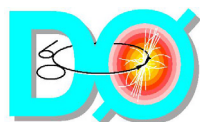
# More on Big Brother

- Frequently disk space is getting full
  - d0ola/b/c disk flashes orange (warning) or red (critical)
  - /online; /home; /projects are most commonly used
  - There is a utility you can run that will help locate the greedy user & the largest used subdirectories
  - Go to the head of the directory that is overused
    - E.g: cd /home
  - Assuming you are logged in as d0run:
    - ~d0run/ddu -k > ~d0run/output.txt
      - This will take 10-15 minutes to run
    - Ignore any error messages on the command line
      - You don't have the authority to view the contents of some subdirectories
    - Scroll through the output.txt file - the numbers are in Kbytes & the subdirectories with the largest use are at the bottom
  - Send email to [d0-online\\_users@fnal.gov](mailto:d0-online_users@fnal.gov) with list of top users
    - Don't send complete list - only the last 50-100 subdirectories at most



# Maximizing Readout System

- Muon readout crate errors
  - Instead of removing the Muon crate, the shifter may be able to disable one or more of the cards in that crate
    - This is called a configuration change - with approval of SC & coordination with Muon shifter, stop the run, make comments & log entry, and start a new run
      - Will not require a new trigger download
- Always verify the status of crates NOT in readout when you come on shift
  - Make sure whiteboard is correct (check email, logbook)
  - Talk with detector shifters or experts
    - Most commonly taken out: x52 & x53 (really CPS crates) and any or all of the L2 crates



# Communication in the Control Room

- Shift Captain (SC) needs to know what is going on
  - **Remember:** the SCs are filling out checklists
    - Inform the SC before you Start or Stop a Run
    - The SC gives you the info on Run quality
    - Keep SC informed on: Crates in Run, Prescale Sets & Alarms
  - **Confirm with SC that you issued store\_begin & store\_end**
    - Michael Begel informed me that D0 has 27 stores with incorrect stop/start times & numbers - CDF only three times
    - The SC gets the call from the MCR when shot setup begins, when scraping ends (Store becomes official) & when the store will be dumped
      - the DAQ Shifter & SC must synchronize
- Verbalize your activity
  - **Everyone should know when you:**
    - Stop & Start a run
    - Pause & Resume a run
    - Having L3/DAQ problems
    - When you leave the control room
  - **You should know what detector shifters are doing...**

